

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of optical imaging of lung cancer of an animate subject involving administering a contrast agent to said subject and generating an optical image of at least a part of the subject to which said contrast agent has distributed, wherein said A~~n~~ optical imaging contrast agent has a molecular weight below 14,000 Daltons with affinity for an abnormally expressed biological target associated with lung cancer, and is of formula I:

$$\text{V-L-R, (I)}$$

wherein

V is one or more vector moieties having affinity for an abnormally expressed target in lung cancer, said target being chosen from cathepsin L, caspase-3, HER2/epidermal growth factor receptor (EGFR), urokinase plasminogen activator receptor and integrin $\alpha v \beta 3$;

L is a linker moiety or a bond; and

R is one or more reporter moieties detectable in optical imaging.

2. (Canceled)

3. (Canceled)

4. (Currently amended) The method ~~A contrast agent~~ as claimed in claim 1 wherein the contrast agent comprises ~~comprising~~ a contrast agent substrate, wherein the target is an abnormally expressed enzyme, such that the contrast agent changes pharmacodynamic properties and/or pharmacokinetic properties upon a chemical modification from a contrast agent substrate to a contrast agent product upon a specific enzymatic transformation.

5. (Canceled)

6. (Currently amended) The method ~~A-contrast-agent~~ as claimed in claim 1 ~~3~~ wherein V is selected from peptides, peptoid moieties, oligonucleotides, oligosaccharides, fat-related compounds and traditional organic drug-like small molecules.

7. (Currently amended) The method ~~A-contrast-agent~~ as claimed in claim 1 ~~3~~ wherein R is a dye that interacts with light in the wavelength region from the ultraviolet to the near-infrared part of the electromagnetic spectrum.

8. (Currently amended) The method of claim 1, where the ~~A pharmaceutical composition for optical imaging of lung cancer comprising a contrast agent is administered as a pharmaceutical composition, said composition comprising a contrast agent~~ as defined in claim 1 together with at least one pharmaceutically acceptable carrier or excipient.

9. (Canceled)

10. (Canceled)

11. (Currently amended) The method as claimed in claim ~~14~~ wherein the optical imaging is for the diagnosis of lung cancer, for the follow up of the progress of lung cancer development, for the follow up of treatment of lung cancer or for surgical guidance.

12. (Canceled)

13. (Canceled)